

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 September 2005 (15.09.2005)

PCT

(10) International Publication Number  
**WO 2005/086346 A1**

(51) International Patent Classification<sup>7</sup>: **H03H 17/02**

(21) International Application Number:  
PCT/DK2004/000140

(22) International Filing Date: 2 March 2004 (02.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **TC ELECTRONIC A/S** [DK/DK]; Sindalsvej 34, DK-8240 Risskov (DK).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ARKNÆS-PEDERSEN, Lars** [DK/DK]; Bernstorffsvej 13, DK-8260 Viby J (DK). **PEDERSEN, Kim, Rishøj** [DK/DK]; Skæring Sandager 54, DK-8250 Egå (DK).

(74) Agent: **PATENTGRUPPEN ApS**; Arosgaarden, Aaboulevarde 31, DK-8000 Aarhus C (DK).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

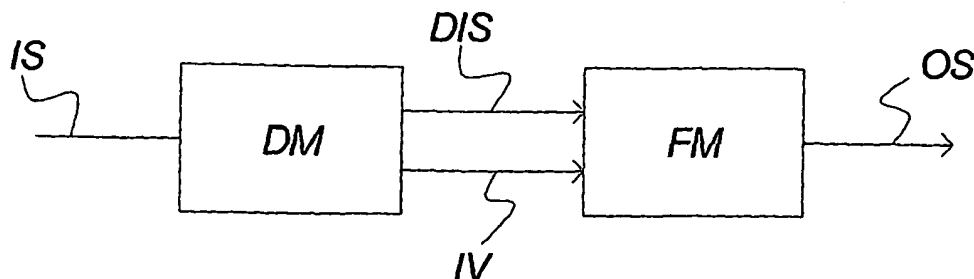
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: FAST FILTERING MEANS AND FILTERING AND DECIMATION METHODS



(57) Abstract: The invention relates to a hardware implemented filtering method comprising the steps of establishing a representation DIS of the derivative of at least a part of a timequantized input signal IS, and establishing at least one sample of a time- and amplitude-quantized output signal OS by performing filtering on the basis of at least a part of a filter representation IFC1, IFC2, IFC3 and said representation DIS of the derivative of at least a part of said input signal IS. The invention further relates to a hardware implemented decimation method for decimating a time-quantized input signal IS comprising the steps of - dividing said time-quantized input signal IS into intervals, for each of said intervals establishing a sample of a time- and amplitude-quantized output signal OS according to the above mentioned filtering method. The invention further relates to a fast filtering means FFM implementing the abovementioned methods.

WO 2005/086346 A1